

REMARKS

This is in response to the Office Action dated April 21, 2006. Claims 3, 6, 10, 14 and 18 have been canceled. Claims 1-2, 4-5, 7-9, 11-13, 15-17 and 19-20 are now pending.

Claim 1 stands rejected under 35 U.S.C. Section 103(a) as being allegedly unpatentable over Anderson in view of Hayasaka. This Section 103(a) rejection is respectfully traversed for at least the following reasons.

Claim 1 as amended requires “at least two of the plurality of through electrodes are connected to one another to form a first high-current through electrode that is in communication with a power supply, at least another two of the plurality of through electrodes are connected to one another to form a second high-current through electrode that is in communication with ground, a particular signal-routing through electrode is formed of only one of the plurality of through electrodes; and at least one of the plurality of through electrodes is a non-contact through electrode which is electrically isolated from the chip.” In other words, at least one of the through electrodes “electrically link[s]” the front surface of the chip to the back surface of the chip and is a “*non-contact through electrode which is electrically isolated from the chip.*” For example and without limitation, see the right-hand non-contact through electrode 19 in Fig. 3 of the instant application which is electrically isolated from the chip; see also non-contact through electrodes 19 in Figs. 8-9.

The cited art fails to disclose or suggest the aforesaid underlined and quoted feature of claim 1. In particular, both Anderson and Hayasaka fail to disclose or suggest a non-contact through electrode electrically linking the front surface of the chip to the back surface of the chip which is a “*non-contact through electrode which is electrically isolated from the chip*” as required by claim 1. Hayasaka, for example, at col. 11, lines 13-16, states that a metal plug that

is used only for heat radiation is not connected with its neighbor. That is, such a metal plug does not link a front surface of the chip to a back surface of the chip such that the chip is not connected with a neighboring chip; which is the opposite of what claim 1 requires.

Accordingly, even the alleged combination of Anderson and Hayasaka (which applicant believes would be incorrect in any event) fails to disclose or suggest (1) a through electrode which *electrically links* the front surface of a chip to a back surface of a chip, *and* (2) the *same* through electrode is *electrically isolated* from the chip in which it is formed. Any plug in Hayasaka which electrically links the front and back surfaces of the chip is also electrically connected to the chip in which that plug is formed. Conversely, any plug that is used only for heat radiation does not electrically link the front surface of the chip to the rear surface of the chip. Moreover, Hayasaka also fails to disclose or suggest that such a plug used for heat radiation is electrically isolated from the chip. Thus, the cited art fails to disclose or suggest the subject matter of claim 1.

Claim 7 requires that “at least one of the through electrodes is a non-contact through type electrode which is not electrically connected to the semiconductor chip in which it is formed.” Moreover, claim 8 requires that “at least one of the through electrodes is a non-contact through electrode which is electrically isolated from the semiconductor chip in which it is formed.” The cited art fails to disclose or suggest each of these features of claims 7 and 8, respectively.

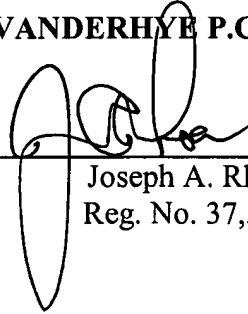
It is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

KIMURA et al
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Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

A handwritten signature in black ink, appearing to read 'J. Rhoa', is written over a horizontal line. The signature is stylized with large loops and a long vertical stroke extending downwards.

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